A COMPARATIVE STUDY OF LANGUAGE GROWTH AND USAGE OF HEAD START AND NON-HEAD START STUDENTS

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To Jimmy and Lynne

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CHAPTER I

INTRODUCTION

Rationale.--In 1950, one child out of every ten in America's 14 largest cities was culturally deprived; by 1960 the figure had become one out of three; by 1970 one of every two big city children is expected to be culturally deprived.[1] Along with these figures which point up the number of culturally deprived children, there is evidence that children of poverty exhibit intellectual limitations in certain skills which are necessary for success in school.

"It is in the area of language development, and particularly with respect to the abstract dimension of verbal functioning, that the culturally deprived child manifests the greatest degree of intellectual retardation."[2] The deficiencies in listening and speaking, factors so important for thought and conceptualization, contribute to a course of failure which becomes more pronounced as the child progresses from grade to grade.

In recent years, considerable attention has been focused on the development of pre-school programs for disadvantaged children. Justifica-

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[1]Frank Riessman, The Culturally Deprived Child (New York: Harper and Row, Publishers, 1962), p. 1.

[2]David P. Ausubel, "The Effects of Cultural Deprivation on Learning Patterns," Audiovisual Instruction, X (January, 1965), 10.

tion for such programs can be found in the works of Piaget,[1] Hunt,[2] and Bloom,[3] who cite evidence that the environment can have a crucial effect on general intelligence in the developmental years. Consequently, the experiences of the child in the early years are vital to his development and influential in the process.

In January, 1965, a program of pre-school centers (Child Development Centers) was announced throughout the United States for the disadvantaged. This program, the largest ever sponsored by the government for young children, was significant in that most pre-schools in America are private, and children who attend them are predominantly from middle-class families. The program, planned to run for eight weeks or a full year, attempted to provide some of the medical, social, nutritional, psychological, and educational advantages that children of middle-class parents enjoy. It was designed to give children a "head start" in school. Being theoretically based on the notion that compensatory education for the disadvantaged is beneficial, many persons felt that, even with only eight weeks of pre-school experience, children would make many gains that would put them at an educational advantage over those who did not attend.

One of the major emphases of the Head Start program has been

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[1]Jean Piaget, The Origins of Intelligence in Children (New York: International Universities Press, Inc., 1952), pp. 1-20.

[2]J. McVicker Hunt, "The Psychological Basis for Using Pre-School Enrichment as an Antidote for Cultural Deprivation," Pre-School Education Today, ed. Fred M. Hechinger (New York: Doubleday and Company, 1966), pp. 25-72.

[3]Benjamin S. Bloom, Stability and Change in Human Characteristics (New York: John Wiley and Sons, 1964), p. 27.

language development. In the area of language, the program "is designed to help children develop vocabulary and verbal fluency, spontaniety in expression. . . ."[1] Children who attend are given a variety of experiences that includes puppetry, storytelling, fingerplays, nursery rhymes, and dramatic plays. They are encouraged to talk freely, to learn new words and to use them. Comments and observations about programs have been enthusiastic about the gains children have made in listening and speaking through the use of these activities.[2]

Evolution of the problem.--This research was undertaken to determine the effectiveness of a seven week pre-school program within the context of limited follow-through experiences in kindergarten or first and second grades. The writer's interest in this subject grew from working with Head Start.

In 1965, Project Head Start enrolled, nationally, approximately 560,000 four-and-five-year old children in over 2,400 communities.[3] In Atlanta, in 1965, approximately 2,888 children were enrolled in the Head Start programs of the private agencies and public schools. In 1966, the number rose to 3,000.

Needless to say, the program has been costly. Interested persons have been looking at the performance of children who attended to see if enough gains were made to justify the program.

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[1]William F. Brazziel, "Two Years of Head Start," Phi Delta Kappan, XLII (March, 1967), 346.

[2]See "Operation Head Start," The Reading Teacher, XIX (February, 1966), 323-351.

[3]Annie L. Butler, "Will Head Start Be a False Start," Childhood Education, XLII (November, 1965), 163.

Another question of importance hinges on the stability of Head Start experiences. In light of this, the language variable was selected as a possible measure of program effectiveness. Since research data on Project Head Start are limited, it is hoped that an investigation of this type will provide knowledge of language changes related to the experiences of disadvantaged children.

Locale of the study.--The study was made in Atlanta, Georgia. The subjects attended the E. P. Johnson and Collier Heights Elementary Schools.

Statement of the problem.--The research was designed to determine the extent to which the Head Start experiences affected the development of vocabulary and mean length of response of the participants from Head Start through the second grades.

Purpose of the study.--The purpose of the study was to analyze two aspects of language development which are related to the language goals of Project Head Start by comparing the language performance of children who attended Head Start with that of children who did not attend, to determine: (1) if Head Starters, as a group, differed significantly in language development from Non-Head Starters, (2) if there were differences at each grade level (kindergarten, first and second grades), and (3) if the differences, by grade levels, varied with time since exposure to the Head Start experience.

More specifically, the study attempted to answer the following questions:

1. Are the Head Starters in kindergarten, first, and second grades, ahead of Non-Head Starters at the same grade levels and the same socio-economic level, in terms of vocabulary development and mean length of response?

2. How does the language development of Head Starters, in

terms of vocabulary and mean length of response, compare with the language development of Non-Head Starters from a middle-class environment?

Hypotheses.--The hypotheses tested in this study were:

1. There is no statistically significant difference between the language development of students with Head Start experience and students from the same socio-economic background without Head Start experience in terms of vocabulary and mean length of response.
2. There is no statistically significant difference between the language development of students with Head Start experience and students from a middle-class environment without Head Start experience in terms of vocabulary and mean length of response.

Definition of terms.--The listed terms are considered significant and are defined as follows:

1. Mean length of response is a quantitative measure of the speech output, derived by computing the mean number of words used in a sentence or verbal response in a conversation.[1]
2. Vocabulary of use is made up of those words that are actually produced or used in oral and written speech.[2]
3. Vocabulary of recognition or "the vocabulary of understanding consists of those words that are recognized or understood when heard or read."[3]

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[1]Wendell Johnson, Frederic L. Darley, and D. C. Spriesterbach, Diagnostic Manual in Speech Correction (New York: Harper and Brothers, 1952), p. 97.

[2]Mildred C. Templin, Certain Language Skills in Children (Minneapolis: The University of Minnesota Press, 1957), p. 105.

[3]Ibid.

4. Middle-class is status as determined by two factors of the formula proposed by Warner. The factors are occupation (of parents) and dwelling area.[1]

Research procedure.--This was an ex post facto experimental design. Kerlinger defines ex post facto designs as:

> That research in which the independent variable or variables have already occurred and in which the researcher starts with the operation of a dependent variable or variables. He, then, studies the independent variables in retrospect for their possible relations to, and effects on, the dependent variable or variables.[2]

In the study, language development was the dependent variable and the Head Start experiences were the independent variables. The survey design utilized a sample of students from Head Start years of 1965, 1966, and 1967.

Sampling procedure.--The sampling procedure was non-probability or accidental.[3] The essential characteristic of non-probability sampling is that the researcher takes the cases available within a given situation. In this research, the disadvantaged subjects were attending the same school. They were selected on the basis of their exposure or non-exposure to Head Start experiences and economic status. Subjects from the middle-class group were drawn from a school in a middle-class neighborhood. Other criteria for selection included occupation of parents and dwelling area.

The sample consisted of 108 disadvantaged children and 54 children

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[1]W. Lloyd Warner, Marcia Meeker, and Kenneth Eells, Social Class in America (Chicago: Science Research Associates, 1949), cited by J. Wayne Wrightstone, et al., Evaluation in Modern Education (New York: American Book Company, 1956), pp. 417-419.

[2]Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, Inc., 1966), p. 360.

[3]Claire Selltiz, et al., Research Methods in Social Relations (2d ed. rev.; New York: Holt, Rinehart and Winston, Inc., 1962), pp. 509-523.

from a middle-class environment enrolled in kindergarten, first, and second grades. Fifty-four disadvantaged children with Head Start experience constituted the experimental group. The "control" groups included 54 disadvantaged children without Head Start experience and 54 children of the middle class who were not eligible for the program because of their socio-economical status. Frequency matching was used to compare subjects in terms of sex and age.

An attempt was made to control intervening variables known to be related directly to language development. Since vocabulary and sentence length increase with chronological age, subjects were comparable on chronological age. At the time of testing, the mean chronological age for each of the three groups--Head Start, Non-Head Start, and Middle class-- was 6.2 years. Sex differences were controlled by including an equal number of boys and girls in each group. Nine boys and nine girls were included from each grade level--kindergarten, first and second grades. Since socio-economic factors influence language development, the disadvantaged students were paired on these factors.

All subjects in the study were Negroes. The disadvantaged pupils lived and attended school in a district that was blighted. For educational purposes, it is called a Title I School. All subjects lived in rented houses or apartments. The neighborhood was not very stable. This had been aggravated by Urban Renewal and the erection of the city stadium. No children had had nursery school experience.

Table 1 lists the occupations of the mothers and fathers of the Head Start and Non-Head Start groups.

The parents of the disadvantaged children were employed mainly as maids, laborers, and in maintenance work. Table 1 shows that the mothers

TABLE 1

OCCUPATIONS OF HEAD START AND NON-HEAD START PARENTS

Occupations	Kindergarten		First Grade		Second Grade		
	Head Start	Non-Head Start	Head Start	Non-Head Start	Head Start	Non-Head Start	Total
MOTHERS							
Housewife	9	9	7	9	11	9	54
Kitchen Helper	1	-	1	1	-	-	3
Maid	5	7	8	6	3	7	36
Waitress	1	-	1	0	-	-	2
Factory Worker	-	-	-	1	-	1	2
Cook	1	1	1	1	2	-	6
Clerk	-	-	-	-	1	-	1
Laundress	1	1	-	-	1	1	4
Total	18	18	18	18	18	18	108
FATHERS							
Truck Worker	-	1	-	-	1	1	3
Kitchen Helper	-	1	-	1	-	-	2
Roofer	-	-	1	-	-	-	1
Maintenance	2	3	1	2	2	2	12
Checker	-	-	1	-	-	-	1
Laborer	3	2	2	2	4	3	16
Army	-	1	1	2	-	-	4
Truck Driver	1	2	1	-	2	-	6
Factory Worker	-	-	1	2	-	-	3
Construction Work	2	1	1	1	1	1	7
Mechanics Helper	-	-	-	1	-	-	1
Business (Self)	-	-	-	-	1	-	1
Mail Handler	-	-	-	-	1	-	1
Unemployed	10	7	9	6	6	7	45
Deceased	-	-	-	1	-	4	5
Total	18	18	18	18	18-	18	108

of both the Head Start and Non-Head Start groups were mainly housewives. However, of those who worked, the category of "maid" was the largest for both groups.

The largest category for the fathers of the Head Start and the Non-Head Start groups was that of the "unemployed". There were slightly

more unemployed fathers of the Head Start groups in both the kindergarten and first grades than there were in the Non-Head Start groups. The "maintenance" and "laborer" groups comprised the next highest number and were about equally distributed among the groups. Table 1 indicates that the occupations of both the Head Start and Non-Head Start groups were comparable.

The middle-class subjects lived in a community that was approximately ten years old. The neighborhood was described as being very stable. Nearly all children had had nursery school experience. All parents were homeowners.

Table 2 shows a variety of occupations for the parents of the middle-class subjects. They were employed in positions such as teachers, secretaries, supervisors, and ministers. The category of "teacher" was the largest for the mothers. "Housewife" comprised the next highest group for the total middle-class sample.

A large number of the middle-class fathers were employed as postal workers. This category was the highest for the total group. The children were included in the study because the fathers were college graduates.

The second highest category for the middle-class fathers was "teacher". Thirty-seven per cent of the fathers were in the categories of "teacher" and "postal worker". The "minister" and "business" groups comprised the next highest numbers. Only one father was unemployed and he was retired from the Army.

Method of collecting data.--Vocabulary was assessed in terms of recognition and use. The Peabody Picture Vocabulary Test was used in assessing the vocabulary of recognition. In this test, the examiner pronounced a word and the subject indicated his understanding of the word by pointing

TABLE 2

OCCUPATIONS OF MIDDLE-CLASS MOTHERS AND FATHERS

Occupations	Kinder-garten	First Grade	Second Grade	Total
MOTHERS				
Housewife	4	2	4	10
Teacher	4	13	5	22
Secretary	4	1	2	7
Clerk	3	1	1	5
Medical Technician	1	-	1	2
IBM	1	-	-	1
Nurse	1	-	2	3
Postal Worker	-	-	2	2
Aide	-	1	-	1
Social Worker	-	-	1	1
Total	18	18	18	54
FATHERS				
Supervisor	1	1	2	4
Engineer	-	2	1	3
Dentist	1	1	1	3
Loan Specialist	2	1	1	4
Postal Worker	5	4	2	11
Tailor	1	-	-	1
Minister	2	1	2	5
Business (Self)	3	-	2	5
Armed Services	1	-	-	1
Nurse	1	-	-	1
Salesman	-	1	1	2
Teletype Operator	-	1	-	1
Teacher	-	4	5	9
Technician	-	1	-	1
Retired (Army)	-	1	-	1
(No)	1	-	1	2
Total	18	18	18	54

to the picture. Each page of four pictures, which was increasingly more difficult, was shown to the subject until a "ceiling" was reached. The raw score of the test was used as a vocabulary of recognition score.

The vocabulary of use was not measured by a published or standardized test. A measure of the vocabulary of use was obtained through the use

of a technique devised by McCarthy.[1] Using this technique, the examiner elicited 50 consecutive oral responses and the mean number of different words appearing was taken as a measure of the vocabulary the child actually used.

All children were tested individually. They were told they were going to play a game. The Peabody Picture Vocabulary Test was given before the 50 responses were elicited.

From the 50 consecutive responses, the examiner obtained the mean length of responses, or the mean sentence length, as it is called in some studies. McCarthy considered the mean length of response to be the most objective and reliable single index of language development.[2] The mean number of words the child used in the 50 responses was considered his mean length of response. The researcher tested all children.

Survey of related literature.--The current interest in pre-school for the disadvantaged is reflected in the number or articles now appearing in professional journals. The writings appear to be of three kinds--those which describe pre-school as an intervention for the deprived, those which describe the successes of Head Start programs, and those which question Head Start as the answer for the disadvantaged. Each of these categories is discussed below in the sequence mentioned above.

Pre-school as an intervention for the deprived.--The fact that schools can intervene and provide pre-school experiences that can compensate for the gap in the disadvantaged child's background is theoretically based on

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[1]Dorothea McCarthy, "Language Development in Children," A Manual of Child Psychology, ed. Leonard Carmichael (New York: John Wiley and Sons, Inc., 1954), pp. 592-593.

[2]Ibid., p. 519.

the findings of J. McVicker Hunt who cites research disproving the notion that intelligence is fixed and its development predetermined.[1] Another finding shows that the long term over-all effect of living in an under-privileged environment, over against a more privileged one, is 20 I.Q. units, the difference being greater during the years from birth to four years.[2] Recognition of these facts has led to a new look and a renewed interest in pre-school experiences, the belief being that early school experiences can offset or compensate for the deficiencies of the deprived home.

Research shows that intervention programs for pre-school culturally deprived children have been relatively effective.[3] However, it has also been found that "Intervention produces certain gains which are evident after the first period of a special program with little evidence that there is an increase in the rate of growth after the cessation of intervention."[4]

Head Start as a success.--Most persons agree that children can and do make rapid gains in Head Start programs. One investigation, made in reference to the effect of Head Start experiences on language development, was concerned with articulation. Louis Stoia and Glenn E. Reeling studied the articulation ability of 41 children enrolled in the Montclair, New Jersey, Head Start Program to see if more growth would occur than would be

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[1] Hunt, op. cit.

[2] Bloom, op. cit., p. 88.

[3] Walter L. Hodges and Howard H. Spicker, "The Effects of Pre-School Experiences on Culturally Deprived Children," Young Children, XXIII (October, 1967), 42.

[4] Ibid.

expected in normal maturation. The children in Head Start were matched with 38 kindergarten children of the same school district and of the same socio-economic level. The Head Start children had a median score of 44.7 on a pre-test and a median score of 47.9 on the post test. Only one test was administered to the control group. The median score for the 38 children in the control group was 44.5. The gain for the Head Start group was 3.2 points, statistically significant at the .01 level of confidence. The investigators concluded that the results of their study indicated that an eight week program at the pre-school level for disadvantaged children can improve their articulation.[1] While the Stoia and Reeling study lends credence to those who maintain that progress is made during Head Start, it does not give evidence that the gains are held.

No statistically significant difference was found in oral language at the first grade level between Head Start and Non-Head Start children in one study. However, at the second grade level, statistically significant differences at the one per cent level were observed.[2]

Head Start usually produces an increase in the child's intellectual ability as well as in his language. At the John Hopkins University Department of Child Psychiatry, Professor Leon Eisenberg found that for Head Starters, as compared with Non-Head Starters, a gain of approximately 31 to 40 points on the Peabody Picture Vocabulary Test was made.[3]

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[1]Louis Stoia and Glenn E. Reeling, "Better Speech for Head Start Children," The Elementary School Journal, LXVII (January, 1967), 213-217.

[2]D. Keith Osborn, "Some Gains from the Head Start Experiences," Childhood Education, XLIV (September, 1967), 11.

[3]"Head Start Report," Scholastic Teacher, LXXXVIII (March 18, 1966), 2.

A study made of the Baltimore Head Start Program analyzed the effect of the program on aspects of cognitive development. The Peabody Picture Vocabulary Test and the Draw-A-Person Test were administered to Head Start and control groups. Initial scores were similar. However, the experimental group showed statistically significant advances after training. Despite gains, however, the Head Start group was still below the norm.[1]

In February, 1966, The Reading Teacher used as its theme, "Operation Head Start." Descriptions of programs in Memphis, North Carolina, Detroit, and Staten Island were included. All reports were laudable of the successes, but statements were based on observations and opinions.[2]

Head Start as an answer.--The question of how beneficial the Head Start program is for pre-school disadvantaged children has not yet been answered. A number of writers has raised questions about the durability of gains from Head Start. A study of 551 children enrolled in New York City's kindergarten classes revealed that there was no statistically significant difference, from six to eight months afterwards, between 186 children who had attended Head Start and 383 children who had not attended Head Start.[3] Finding, however, that there is a close association between Head Start and later learning, Wolff and Stein state, "Good teaching in kindergarten or bad teaching in kindergarten is much more of an

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[1]Leon Eisenberg and C. Keith Conners, "The Effect of Headstart on Developmental Processes," (unpublished paper presented at the 1966 Joseph P. Kennedy Foundation Scientific Symposium on Mental Retardation, Boston, April, 1966).

[2]The Reading Teacher, op. cit.

[3]Max Wolff and Annie Stein, "Head Start Six Months Later," Phi Delta Kappan, op. cit., 349-350.

influence on the child who has had Head Start than one who has not."[1]

In a follow-up study which investigated the academic readiness of children who had participated in Head Start programs and one year of kindergarten, it was found that "the group of children who had Head Start experiences did not score statistically significantly higher on the Metropolitan Readiness Test when they were compared with a control group which did not participate in Head Start."[2]

Studies such as above have caused persons to look more critically at Head Start programs. One writer, although applauding Head Start for its medical, dental, and social work components, commented:

> ...But like other programs mentioned it has generally neglected what the innovators believe to be a key factor for poor children; their preparation for academic learning. Past the age of four, it seems trips to the zoo or a chance to play with blocks can have very little effect on slum children's ability to think, read, write or even speak.[3]

Another writer, speaking in the same vein, states: "Project Head Start, as it is currently set forth, is a program of child welfare rather than child education.... But welfare services will not make an ignorant child knowledgeable or teach a dull child to think."[4]

Ivor Kraft believes Head Start, as now operated, has been oversold as an antidote for poverty and that plans should be made for top

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[1]Max Wolff, "Is the Bridge Completed?" Childhood Education, XLIV (September, 1967), 14.

[2]Irvin A. Hyman and Deborah Sill Kliman, "First Grade Readiness of Children Who Have Had Summer Head Start Programs," The Training School Bulletin, LXIII (February, 1967), 166.

[3]Maya Pines, "Slum Children Must Make Up for Lost Time," The New York Times Magazine, October 15, 1967, pp. 67-68.

[4]Carl Bereiter, "Are Preschool Programs Built the Wrong Way?" Nation's Schools, LXXVII (June, 1966), 55.

quality day care centers for all, regardless of income and residence.[1] In another article by Brazziel, Kraft is cited as questioning the validity of gains reported in studies because of the variance of results.[2]

The future of Head Start appears bright inspite of the critical comments made about it. In November, 1966, Sargent Shriver made several suggestions that he felt might help children to retain the gains they make in Head Start. The suggestions were as follows:

> Provide one teacher for every 15 children
> Utilize teacher aids, including volunteers
> Provide all necessary supplies, including toys and films, and fuller use of electronic learning aids
> Initiate programs to train childhood development specialists to work exclusively in the early primary grades; diagnose obstacles to a child's progress; and refer children, where necessary, to psychologists, sociologists and reading specialists.[3]

Along this same line, the Director of Project Head Start, New York City, writes that subsequent experiences for the child will make the difference between a head start or false start. She makes reference to primary teachers, and the same philosophy upon which Project Head Start is established--family contact, program, and psychology.[4]

In light of the overwhelming enthusiasm shown by teachers, parents, and directors of Head Start Centers, and in view of the results of studies made of children's achievement, President Johnson asked Congress for $135,000,000 to provide Follow-Through Pilot Programs in several major

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[1] Ivor Kraft, "Head Start To What?" The Education Digest, (November, 1966), 2.

[2] Brazziel, op. cit., 347.

[3] "Current Comment," America, CXV (December 10, 1966), 763.

[4] Elizabeth A. Vernon, "Head Start or False Start?" Grade Teacher, LXXXIV (December, 1966), 84.

cities for the school year, 1967-68.[1] According to Brademas, "Follow-through is designed to demonstrate what can be accomplished if disadvantaged children are given the same kind of attention in kindergarten or first grade that they enjoyed in Head Start."[2]

Because this is the first year of operation for the Follow-through program, it is not known how successful it is. Presently, Head Start and Follow-Through are being curtailed by Congress because of smaller appropriations in the name of economy. It is estimated that 13,000 deprived pre-schoolers will be dropped from full-year Head Start programs.[3]

In a recent publication which reports the evaluations of nation-wide compensatory programs for the disadvantaged, the authors state that nowhere did they find an effort to evaluate programs by criteria which they felt were pertinent. These criteria were:

> a precise description of the newly introduced educational practices, of the specific conditions under which they are initiated, and of the populations to whom they are applied; the careful identification of target population and of appropriate control groups for whom specified criterion measures are established; and the collection and analysis of data appropriate to the measures identified.[4]

The present study attempts to meet some of these criteria.

Summary of related literature.--Pre-school education for the disadvantaged has become the focus of attention since the implementation of Project Head Start in 1965. Although statistical research data are limited

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[1] John Lloyd, "Washington Report: Head Start Follow-Through," Scholastic Teacher, XC (February 24, 1967), 15.

[2] John Brademas, "View from Capitol Hill," Grade Teacher, LXXXV (April, 1968), 29.

[3] Ibid.

[4] Edmund W. Gordon and Doxey A. Wilkerson, Compensatory Education for the Disadvantaged (New York: College Entrance Examination Board, 1966), p. 156.

on the achievements of the program, there is some evidence that the program is beneficial. It seems to have a positive effect on the development of pre-school disadvantaged children. Head Start children often score higher on measures but gains are not held without appropriate follow-up efforts in kindergarten and first grades. The future of Head Start appears assured. Follow-Through was initiated to help children maintain gains they make.

CHAPTER II

PRESENTATION AND INTERPRETATION OF DATA

One of the arguments for pre-school education has been that the educational handicaps of disadvantaged children can be modified by exposure to a special curriculum.[1] The effect of Project Head Start on the development of disadvantaged children has been of major importance since the inception of the program in 1965. Several attempts to assess the effects of this eight week intervention program have been made with the conclusion offered that, while large gains in scores on achievement and intelligence tests are attained, they are lost during the first year of public school.

Because one of the emphases of Project Head Start was on language development, the language variable was selected as a measure of program effectiveness in this investigation. Limited research data are available on the language development variable. However, several projects are in progress to assess the effects of Head Start on language development.[2] Of the present studies reported in journals, this research differs from them in that three groups of children--Head Start, Non-Head Start, and

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[1] "Pre-School Educational Programs," IRCD Bulletin, I (March, 1965), p. 2.

[2] Ralph C. Staiger, "Language Arts Research: 1966," Elementary English, XLIV (October, 1967), 620-621.

middle class--are sampled from each of the three Head Start years, 1965, 1966, and 1967. This chapter presents the results of their performance in two areas of language, namely vocabulary and mean length of response.

The acquisition of language is related to environment and experience. It is assumed, in comparing children from different environments, that the higher the socio-economic level, the greater the degree of proficiency in language development and usage. Children's exposure to enrichment experiences provides opportunities for good verbal development. The language objective of Project Head Start was to minimize the verbal deficit of the deprived child by providing opportunities for oral speech and by giving adequate motivation to foster the growth of language facility.

Total group performance.--In order to test the hypotheses concerning the development of vocabulary and length of responses in Head Starters, as compared to Non-Head Starters and middle-class children, who did not attend the program, subjects were assessed in the areas of vocabulary and length of response. The Peabody Picture Vocabulary Test was administered to the three groups first. The raw scores of the test were used as vocabulary scores. Table 3 shows how the Head Starters, Non-Head Starters, and middle-class subjects, composed of three sub-samples--kindergarten, first and second grades--compared on the test.

The data indicate that, on the Peabody Picture Vocabulary Test, which measures words that are understood or recognized, the 54 Head Starters, over a three year range, scored higher than the 54 Non-Head Starters for the same period. The middle-class subjects, over a three year range, scored higher than both the Head Start and Non-Head Start subjects.

In order to compare the vocabulary of recognition for the three groups, $\bar{z}$-ratios were computed. The analysis is summarized in Table 4.

TABLE 3

VOCABULARY RECOGNITION SCORES FOR HEAD START, NON-HEAD START, AND MIDDLE-CLASS PUPILS ON THE PEABODY PICTURE VOCABULARY TEST

Group	N	Mean	S.D.	SE_m
Head Start	54	45.4	9.0	1.24
Non-Head Start	54	43.1	10.5	1.44
Middle Class	54	50.2	9.6	1.32

TABLE 4

MEAN COMPARISONS OF VOCABULARY RECOGNITION FOR THREE GROUPS ON THE PEABODY PICTURE VOCABULARY TEST

Group	Mean Differences	Standard Error of the differences between the means	$\bar{z}$-ratios
Head Start vs. Non-Head Start	2.34	1.90	1.21
Head Start vs. Middle Class	4.77	1.81	2.65
Non-Head Start vs. Middle Class	7.11	1.95	3.63

Table 4 indicates that the difference between the means of the Head Start and Non-Head Start subjects is not statistically significant; $\bar{z}$ is 1.21. The short period of time contained in the Head Start exposure (seven weeks) may be a contributing factor. In comparing the Head Starters with the middle-class group, the difference was significant at the .05 level; "$\bar{z}$" is 2.65. This is a function of the fact that middle-class children encounter many enrichment experiences which are language-oriented.

Also, the fact that most tests are middle-class oriented may be a cause. The level of significance of difference between middle-class and Non-Head Start is higher than it is for Head Starters and Middle-Class subjects. This finding, which is significant at the .05 and the .01 levels, lends support to the interpretation that the short period of time in Head Start may account, in large measure, for a lack of statistically significant difference between the means of vocabulary recognition for Head Starters and Non-Head Starters.

Vocabulary of recognition scores by grade levels.--To compare more adequately the mean scores of the three groups, Table 5, showing a breakdown of scores by "boys", "girls", and grade levels, is presented.

Table 5 shows that the boys generally performed better than the girls. One also sees that the mean scores for each group increased consistently by grade levels. This trend did not favor the boys or girls.

Although most writers believe language facility favors girls, Table 5 indicates that, on each grade level, the boys who attended Head Start scored higher than the girls who attended. This superiority of the boys can also be seen in the middle-class group at all levels. Specifically, Head Start and middle-class boys in kindergarten and first grade performed at a higher level than did the comparable groups of girls. However, for the second grade Head Start, Non-Head Start and middle-class boys had higher mean scores than the girls.

For the Non-Head Start group, the girls in kindergarten and grade one scored higher than did the boys. The Non-Head Start girls also scored slightly higher than did the Head Start girls at the kindergarten and second grades. It is evident that the difference in mean scores is greater between Head Start boys and Non-Head Start boys, than it is between Head

TABLE 5

MEAN SCORES ON THE PEABODY PICTURE VOCABULARY TEST BY GRADE LEVELS

Levels	N	Boys M	Boys SD	Girls M	Girls SD	Total M	Total SD
Kindergarten							
Head Start	18	37.5	7.5	36.7	2.6	37.2	4.7
Non-Head Start	18	32.3	6.9	37.2	8.7	34.8	8.3
Middle Class	18	50.3	7.6	43.2	8.0	46.8	8.7
First Grade							
Head Start	18	48.3	7.3	44.6	8.2	46.5	8.1
Non-Head Start	18	42.6	8.4	44.1	8.4	43.4	7.7
Middle Class	18	55.3	3.9	51.6	6.4	53.5	5.7
Second Grade							
Head Start	18	55.6	3.5	49.4	3.7	52.5	5.4
Non-Head Start	18	53.2	7.8	49.7	8.2	51.5	8.2
Middle Class	18	58.3	6.0	55.4	8.4	56.9	7.7

TABLE 6

MEAN COMPARISONS ON PEABODY PICTURE VOCABULARY TEST BY SEX

Sex	N N	Mean Differences	Standard error of the difference Between Means	t-ratios
Kindergarten				
HS Girls vs. HS Boys	9	.78	2.82	.27
NHS Girls vs. NHS Boys	9	4.89	3.72	1.24
MC Girls vs. MC Boys	9	7.11	3.92	1.81
First Grade				
HS Girls vs. HS Boys	9	3.67	3.91	.91
NHS Girls vs. NHS Boys	9	1.45	4.22	.34
MC Girls vs. MC Boys	9	3.67	2.69	1.37
Second Grade				
HS Girls vs. HS Boys	9	6.22	1.98	2.82
NHS Girls vs. NHS Boys	9	3.45	4.03	.86
MC Girls vs. MC Boys	9	2.89	3.77	.76

HS - Head Start NHS - Non-Head Start MC - Middle Class

Start girls and Non-Head Start girls. These data would tend to question the general assumption that, during the first three grade levels, at least, girls exhibit greater verbal skills than do boys.

Although the boys who attended Head Start scored higher than the girls who attended the program, the difference was statistically significant only at the second grade level. The gain for boys was significant at the .05 level, "t" being 2.82. The fact that the gain is statistically significant only at the second grade lends support to the question raised in another study as to the possible latent effects of Head Start experience. In the study no difference was found in oral language, between Head Start and Non-Head Start children at the first grade level. However, at the second grade level, significant differences at the one per cent level were observed.[1]

Table 7 shows the summation of the t-ratios for each group by grade level and the amount of dispersion for each level.

TABLE 7

MEAN COMPARISONS ON THE PEABODY PICTURE VOCABULARY TEST BY GRADE LEVELS

	Grade	Mean Differences	Standard error of Difference Between Means	t-ratio
Head Start vs. Non-Head Start	K	2.39	2.30	1.03
Non-Head Start vs. Middle Class	K	12.00	2.91	4.13
Head Start vs. Middle Class	K	9.61	2.32	4.47
Head Start vs. Non-Head Start	1	3.11	2.71	1.11
Non-Head Start vs. Middle Class	1	10.11	2.31	4.27
Head Start vs. Middle Class	1	7.00	2.39	2.96
Head Start vs. Non-Head Start	2	1.05	2.37	.44
Non-Head Start vs. Middle Class	2	5.38	2.72	1.21
Head Start vs. Middle Class	2	4.33	2.28	1.89

[1] Osborn, op. cit., p. 11.

Although the Head Starters scored slightly higher than the Non-Head Starters on each grade level, the scores were not statistically significantly different. Table 7 shows, however, that the difference between the mean scores for the middle-class subjects and the Head Starters was significant at the kindergarten and first grade levels. The middle-class subjects' recognition of words was significantly different at the .05 and .01 levels for the kindergarten and first grade levels, for both the Head Start and Non-Head Start subjects. This superiority of the middle-class subjects may be due to their experiential background. Disadvantaged children have less chance than middle-class children to learn incidentally from their environment things which serve as referents for language acquisition.

Analysis of vocabulary of use.--Vocabulary, which consisted of the words actually used by the three groups in conversation, was obtained by using Dorothea McCarthy's method. Fifty responses were elicited under specific conditions from each subject, with the number of different words appearing taken as a measure.

Total group performance.--The mean scores for the three groups were very close, ranging from 91.9 to 97.2. Table 8 presents the mean number of different words used in 50 consecutive responses.

The data in Table 8 indicate that the Head Start group, composed of three sub-samples from kindergarten to second grade, used more different words than the Non-Head Start group. The middle-class group used more different words than either the Head Start or the Non-Head Start group.

The $\bar{z}$-ratios for the three groups are presented in Table 9.

As may be seen in the Table 9, the mean number of different words used by Head Starters was not significantly different when compared to the

TABLE 8

MEAN NUMBER OF DIFFERENT WORDS USED BY HEAD START, NON-HEAD START, AND MIDDLE-CLASS GROUPS

Group	N	Mean	SD	SE_m
Head Start	54	93.2	22.3	3.07
Non-Head Start	54	91.9	24.8	3.04
Middle Class	54	97.2	25.7	3.53

TABLE 9

COMPARISONS OF MEAN NUMBER OF DIFFERENT WORDS USED

Groups	Mean Differences	Standard Error of Difference Between Means	$\bar{z}$-ratios
Head Start vs. Non-Head Start	3.95	4.32	.300
Head Start vs. Middle Class	.11	4.68	.870
Non-Head Start vs. Middle Class	3.84	4.66	1.15

mean number of words used by the Non-Head Starters. While the differences between the means of the groups were not statistically significant, the high standard error between the means was for Head Start versus middle-class. This means high intra-group variance, which again points to the advantage of Head Start experiences even though not statistically significant.

Vocabulary of use scores by grade levels.--Mean values for the number of different words used in 50 responses are summarized in Table 10. Boys' and girls' scores are presented separately.

TABLE 10

SUMMARY OF NUMBER OF DIFFERENT WORDS USED

Levels	N	Boys M	Boys SD	Girls M	Girls SD	Total M	Total SD
Kindergarten							
Head Start	18	88.4	22.4	93.8	18.4	91.1	20.7
Non-Head Start	18	85.0	20.1	89.5	24.8	87.2	22.7
Middle Class	18	93.7	29.0	88.3	25.5	91.0	27.4
First Grade							
Head Start	18	85.5	18.2	94.0	21.0	89.8	20.1
Non-Head Start	18	88.9	24.6	87.8	26.8	88.3	25.7
Middle Class	18	98.5	32.6	101.3	26.8	99.9	27.5
Second Grade							
Head Start	18	88.5	21.1	108.1	21.5	98.3	23.5
Non-Head Start	18	95.8	19.7	103.0	24.9	99.4	22.7
Middle Class	18	95.7	18.2	104.8	13.4	100.2	16.8

Table 10 gives a breakdown of the Head Start, Non-Head Start, and middle-class groups by grades and sex. On the kindergarten and first grade levels, the Head Starters used more different words than the Non-Head Starters. At the second grade level, the Non-Head Start group scored slightly higher than the Head Start group.

The Head Start girls consistently used more different words than did the Head Start boys. On the kindergarten and second grade levels, the Head Start girls used more different words than the middle class girls. The Head Start girls excelled over the Non-Head Start girls on all three grade levels.

The Head Start boys were higher than Non-Head Start boys in mean number of words used only in kindergarten. In the first and second grades, the Non-Head Start boys used more different words than the Head Start boys.

Middle class boys exceeded Head Start and Non-Head Start boys in

kindergarten and first-grade. Yet, Non-Head Start boys slightly exceeded middle-class boys in the number of different words used in second grade. Middle-class girls showed more gains than Middle-class boys in the first and second grades.

Although the girls consistently used more different words than the boys, the difference was not statistically significant, as can be seen in Table 11.

TABLE 11

NUMBER OF DIFFERENT WORDS USED BY SEX

	N	Mean Differences	Standard error of differences between means	t-ratios
Kindergarten				
HS girls vs. HS boys	9	5.33	10.28	.52
NHS girls vs. NHS boys	9	4.55	14.34	.40
MC girls vs. MC boys	9	5.33	13.76	.39
First Grade				
HS girls vs. HS boys	9	8.45	9.80	.86
NHS girls vs. NHS boys	9	1.11	12.89	.08
MC girls vs. MC boys	9	2.78	14.95	.58
Second Grade				
HS girls vs. HS boys	9	19.56	10.74	1.84
NHS girls vs. NHS boys	9	7.23	11.00	.64
MC girls vs. MC boys	9	9.11	8.03	1.14

HS - Head Start NHS - Non-Head Start MC - Middle Class

The data shown in Table 11 indicate that only small non-significant differences were found between girls and boys in terms of the number of different words used. Here, again, the short period of the Head Start experience may be a contributing factor.

Table 12 presents comparisons of the mean performance by grade

levels.

Although the Head Starters scored higher on the number of different words used than the Non-Head Starters in the kindergarten and first grade, the difference was not statistically significant. Table 12 indicates that, for every comparison made by grades, only small non-significant differences were found. Neither Head Start experience nor middle class status produced a significant difference in the number of words used when compared with the Non-Head Starters. The difference of three grade levels may not be long enough to be an important influence or the absence of follow-through may mean that the middle class and Head Start gain is soon lost.

TABLE 12

COMPARISONS OF NUMBER OF DIFFERENT WORDS USED BY GRADE LEVELS

	Grade	Mean Differences	Standard error of difference between means	t-ratios
Head Start vs. Non-Head Start	K	3.95	7.44	.532
Non-Head Start vs. Middle Class	K	3.84	8.64	.45
Head Start vs. Middle Class	K	.11	8.32	.01
Head Start vs. Non-Head Start	1	1.44	7.92	.18
Non-Head Start vs. Middle Class	1	11.61	9.13	1.35
Head Start vs. Middle Class	1	10.17	8.26	1.23
Head Start vs. Non-Head Start	2	1.05	7.92	.13
Non-Head vs. Middle Class	2	.84	6.85	.12
Head Start vs. Middle Class	2	1.89	7.00	.08

Analysis of mean length of responses.--The mean length of response is considered a reliable index of verbal development.[1] In the present investigation, the measure was computed from 50 consecutive responses of each subject. Templin's criteria for counting words were used.[2]

Total group performance.--Mean scores for Head Start, Non-Head Start and middle class groups, in terms of average verbal response are presented in Table 13. Each group was composed of subsamples from kindergarten, first, and second grades.

TABLE 13

MEAN LENGTH OF RESPONSES

Group	N	Mean	SD	SE_m
Head Start	54	10.0	13.0	1.78
Non-Head Start	54	5.8	14.8	2.03
Middle Class	54	9.1	15.4	2.11

Table 13 indicates that the Head Start group used longer sentences than the Non-Head Start group. The average sentence length was 10.0 words for the Head Start group, and 5.8 words for the Non-Head Start group. The Head Start group also emitted longer responses than the middle-class group.

The fact that the Head Start and middle-class children performed similarly on mean length of response is evident from their approach to the situation. The entire approach of the two groups differed. The Head

[1] Johnson, op. cit.

[2] Templin, op. cit.

Starters, when told they were going to play a "game," took this statement at face value because of their experience in Head Start. No anxiety or concern for the situation was noticed. The children talked freely, often making random and irrelevant responses.

On the other hand, the middle-class subjects were anxious and cautious about their responses in the "game." They appeared to have suspected that the activity was an assessment of some kind and their behavior indicated that they were concerned about doing and saying the right thing. It is possible that the middle-class subjects did not use the language they were capable of using.

The $\bar{z}$-ratios were computed for the comparisons of the groups. The data are presented in Table 14.

TABLE 14

COMPARISONS OF MEAN LENGTH OF RESPONSE BY GROUPS

	Mean differences	Standard error of difference between means	$\bar{z}$-ratios
Head Start vs. Non-Head Start	4.2	2.71	1.55
Head Start vs. Middle Class	.9	2.77	.32
Non-Head Start vs. Middle Class	3.3	2.93	1.2

Although the Head Starters' average response length was higher than that for the Non-Head Starters, the difference was not statistically significant, (Table 14). Also, there was no significant difference in the mean length of responses of the Head Start and middle class groups.

The analysis of responses indicates that the length of responses

was very close for all groups.

Mean length of response by grade levels.--Further analysis of mean length of responses by grades is given in Table 15.

TABLE 15

MEAN LENGTH OF RESPONSE BY GRADE LEVELS

Levels	Boys			Girls		Total	
	N	M	SD	M	SD	M	SD
Kindergarten							
Head Start	18	4.0	1.7	4.1	1.0	4.1	1.4
Non-Head Start	18	3.4	1.3	3.6	1.1	3.5	1.2
Middle Class	18	4.3	2.0	3.5	1.1	3.9	1.7
First Grade							
Head Start	18	3.2	.7	3.9	1.0	3.6	1.0
Non-Head Start	18	4.2	1.6	3.4	1.4	3.8	1.5
Middle Class	18	4.4	1.6	4.1	1.4	4.2	1.5
Second Grade							
Head Start	18	3.9	1.4	4.3	.9	4.0	1.3
Non-Head Start	18	4.0	1.2	4.6	1.5	4.3	1.4
Middle Class	18	4.0	.9	4.7	1.6	4.4	1.3

In Table 15, it is evident that the Head Start girls uttered longer responses than the Head Start boys on all levels. Also, the Head Start girls outranked the Non-Head Start girls on the kindergarten and first grade levels, but were outranked by Non-Head Start girls on the second grade level. The Head Start boys made longer sentences at the kindergarten level than they did at any other level.

Non-Head Start girls outranked Non-Head Start boys in kindergarten and second grade. Non-Head Start boys exceeded Head Start boys in first and second grades.

The middle-class boys had longer responses than the middle-class

girls in kindergarten and first grade, but not in second grade. The middle-class boys also exceeded the Head Start and Non-Head Start boys in kindergarten and first grade. They were almost equal to both groups in the second grade. The middle-class girls outranked Head Start and Non-Head Start on the first and second grade levels, but not in kindergarten where Head Start and Non-Head Start outranked them.

By groups, the Head Start subjects scored higher only on the kindergarten level, where they surpassed both the Non-Head Start and middle-class subjects. The middle-class subjects emitted longer responses than the Head Start and Non-Head Start subjects in the first and second grades. Consequently, the Head Starters were lower in first and second grades than either the Non-Head Starters or the middle-class group.

The mean for the Non-Head Starters, in Table 15, is higher than that of the Head Starters in the first and second grades. Although the Non-Head Start and middle-class groups showed a generally steady increase from grade to grade, the first grade Head Start group did not score as high as the kindergarten Head Start group. Mean comparisons of response lengths for boys and girls are presented in Table 16.

The data shown in Table 16 indicate that only small non-significant differences were found between girls and boys in the mean comparisons of length of responses. Although the Head Start girls had a higher mean score than the boys at all levels, the difference between the means was greater at the first grade. For the Non-Head Start group, the difference between the means was greater, in favor of girls, in the first grade. In the middle-class group the difference between means was greater, for boys, in kindergarten. These data are consistent with the Templin study, which found that, although girls are often reported as uttering longer remarks,

TABLE 16

MEAN COMPARISONS OF LENGTH OF RESPONSES BY SEX

	N	Mean Differences	Standard Error of Difference Between Means	t-ratios
Kindergarten				
HS girls vs. HS boys	9	.1	.70	.15
NHS girls vs. NHS boys	9	.2	.59	.33
MC girls vs. MC boys	9	.7	.82	.85
First Grade				
HS girls vs. HS boys	9	.7	.80	1.46
NHS girls vs. NHS boys	9	.8	.76	1.06
MC girls vs. MC boys	9	.3	.73	.41
Second Grade				
HS girls vs. HS boys	9	.4	.80	.65
NHS girls vs. NHS boys	9	.6	.76	.85
MC girls vs. MC boys	9	.7	.73	1.09

HS - Head Start NHS - Non-Head Start MC - Middle Class

there is practically no statistically significant difference between the mean length of responses of boys and girls.[1] Table 17 presents the analysis of the three groups by grade levels.

No statistically significant differences were found in Table 17 when groups were compared by grade levels. It is evident that in mean length of response, there was no statistically significant difference between disadvantaged and middle-class groups. This lack of significance may be reflected in the fact that for Negro disadvantaged and middle-class children, the linguistic environments of the two groups in the early years do not vary as much as is generally thought. While it is true that disadvantaged children have less chance than middle-class children to learn

[1] Ibid., p. 77.

TABLE 17

COMPARISONS OF MEAN LENGTH OF RESPONSES BY GRADE LEVELS

	Grade	Mean difference	Standard error of differences between means	t-ratios
Head Start vs. Non-Head Start	K	.6	.37	.45
Non-Head Start vs. Middle Class	K	.4	.42	.25
Head Start vs. Middle Class	K	.2	.45	.38
Head Start vs. Non-Head Start	1	.2	.37	.46
Non-Head Start vs. Middle Class	1	.6	.48	.77
Head Start vs. Middle Class	1	.4	.36	.44
Head Start vs. Non-Head Start	2	.3	.39	.65
Non-Head Start vs. Middle Class	2	.1	.47	.21
Head Start vs. Middle Class	2	.4	.45	.90

language incidentally from their environment, it should be recognized that the middle-class Negro mother, who has the ability to stimulate and motivate her child language-wise, usually is employed at the time when he is learning and developing speech patterns. The child is usually put in a nursery school, where the emphasis is custodial rather than educational, or kept in the home by a person who is available or disadvantaged.

On the other hand, the disadvantaged parent, who does not have the verbal ability of the middle-class parent, may, because of other children, be at home with her child during the early years. It is possible that while the middle-class child gets more stimulation than does the disadvantaged, there is no significant difference between the linguistic environments of the two groups. Also, the middle-class mother's absence from home during the child's developmental years may be important in terms of the development of sentence length. Probably, the quality of training and environment are the significant factors in good language development

of children.

Results.--Each of the hypotheses was tested in the null form to determine whether differences between the Head Start - Non-Head Start and middle-class groups was considered sufficient to reject the null hypotheses.

Neither random sampling nor randomized assignment of children was made. Consequently, the extent to which and to whom results can be generalized is limited.

The hypothesis of this study that there is no significant difference in the language development of students with Head Start experience and students from the same socio-economic background without the experience, in terms of vocabulary and mean length of response, is accepted. The testing of the hypothesis revealed that, while the Head Start group showed more gains than the Non-Head Start group in vocabulary and mean length of response, the difference was not statistically significant.

The second hypothesis that there is no significant difference in the language development of students with Head Start experience and students from a middle-class environment, in terms of vocabulary and mean length of response, was accepted because generally, the middle-class subjects' gain on measures was not statistically significant over Head Starters. The language of both Head Starters and Non-Head Starters was similar to that of the middle-class in terms of vocabulary of use and mean length of response. However, in the measure used to assess vocabulary of recognition, the middle-class subjects differed significantly from Head Start and Non-Head Start subjects in the comparison of total group performance, and in kindergarten and first grades. An explanation of the findings is given in the next section.

Discussion and implications.--Findings of this study are discussed

within the framework of the questions stated in the purpose. The study was designed, first of all, to determine if Head Starters, as a group, differed in language development significantly from Non-Head Starters from the same socio-economic level.

It has been suggested that the Head Start Program would give children a greater advantage over their peers when they entered school. The results of this study show that, in vocabulary and mean length of response, there was no significant difference between the two groups. This finding gives support to the conclusion advanced by Wolff and Stein[1] and Hyman and Kliman[2] who found no significant difference in social and educational readiness between children who attended Head Start and children who did not.

Grade level differences.--The second objective of the research was to determine if there were differences at each grade level of kindergarten, first, and second grades. Language differences, although not significant, were found to exist at each grade. It is interesting to note that in two measures, mean length of response and mean number of different words, the kindergarten Head Starters performed better than first grade Head Starters. On the other hand, the Non-Head Starters showed a steady increase in these measures from grade-to-grade. This finding might suggest that the permissive environment of the Head Start Program, with its small enrollment and adult interaction, encourages speech development and usage, while the classroom, with its larger enrollment, restricted movement, and authoritarian methods of class control, encourages passivity and

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[1]Wolff and Stein, op. cit.

[2]Hyman and Kliman, op. cit.

limits oral communication. Because the Head Starter, after Head Start, must adjust to this difference in school climate, regression is made quantitatively, and possibly qualitatively, in his speech. The Non-Head Starter, who does not have to make this adjustment, is able to develop progressively on measures of number of different words used and mean length of response.

The comparison of boys and girls by grades failed to produce evidence that girls are ahead of boys consistently in the areas measured, as most writers have suggested. However, this research showed, as Templin's, that neither sex had a consistent significant advantage.[1]

Although the girls showed more gains on two measures, number of different words and mean length of responses, these gains were not statistically significant. The Head Start and middle-class boys were superior to the girls at all grade levels for vocabulary of recognition; and, at the second grade, the difference was significant at the .01 level. Because the test used for this measure was standardized, this finding might suggest that boys, when given the attention and affection that Head Start offers and that is given to girls generally, will develop better linguistic skills than they would under normal conditions.

Another explanation might be that since the pattern of responses for Head Start and middle-class boys were similar, pre-school experiences benefit boys more than girls. This explanation would extend and support the research by Bayley and Schaefer, who suggest that the need for pre-school experiences is greater for boys than for girls.[2]

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[1]Templin, op. cit.

[2]Nancy Bayley and Earl S. Schaefer, Monograph of the Society

Durability of gains.--The third objective of the research was to determine if differences by grade levels vary in time since exposure to the Head Start experiences. The kindergarten Head Start group, tested one month after the Head Start program ended, showed more gains than the other Head Start groups tested one and two years since the program involvement on all measures. Except for sentence length, however, the Head Start groups continued to show an advantage over Non-Head Start groups. This evidence implies that, even with limited follow-through, the effects of Head Start can be observed several years later on some areas of language development. There is a possibility, then, that children do not lose their gains in language as quickly as they do the gains they make in other areas. More good research in this area may clarify this trend.

Language growth as related to socio-economic factors.--The study attempted to answer, also, the question: How does the language development of Head Starters, in terms of vocabulary and mean length of response, compare with the language development of Non-Head Starters from a middle-class environment? Children from families of higher socio-economic status have been found to have linguistic advantages over children from lower socio-economic groups, with respect to vocabulary and length of response. However, most studies in the literature have developed their data with children from middle-class white families. This research, with Negro middle-class children, did not support this position. Except for two levels on the measure of vocabulary recognition, there was no significant differ-

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for Research in Child Development ("Child Development Publications of the Society for Research in Child Development, Inc.: Correlations of Maternal and Child Behaviors with the Development of Mental Abilities: Data from the Berkeley Growth Study," XXIX, No. 6; Yellow Springs, Ohio: The Antioch Press, 1964), pp. 20-31.

ence between Head Starters and Non-Head Starters from the middle-class group. This finding implies that Head Start experiences benefit the disadvantaged and decrease social class differences in this area of language development and usage.

Summary of findings.--The major findings of this study indicate that:

1. There is a significant difference between middle-class subjects and Non-Head Start subjects in vocabulary recognition in kindergarten and first grade.
2. There is a significant difference between middle-class subjects and Non-Head Start subjects in vocabulary recognition in kindergarten and first grade.
3. A significant difference in favor of boys is noted in vocabulary recognition scores when compared to girls in the second grade.
4. There is no significant difference between Head Start and Non-Head Start children in vocabulary of use and mean length of response.
5. There is no significant difference between Head Start and middle-class subjects in vocabulary of use and mean length of response.

CHAPTER III

SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Recapitulation of research design.--In recent years, there has been an increased interest in the education of pre-school children. In 1965, a summer pre-school program called "Project Head Start" was initiated by the government for disadvantaged children. Since that time, in many communities all over the United States, Project Head Start has provided opportunities for disadvantaged children to participate either in a seven or eight week summer program or a nine month (full year) program. Activities have been mostly language oriented in an effort to help children develop vocabulary and verbal fluency.

In view of the increasing emphasis on compensatory training for disadvantaged children, the writer sought to determine the extent to which the Head Start program has affected the development of vocabulary and mean length of response in the participants from Head Start through the second grade. The writer's interest in this area grew from her two years of participation in Project Head Start.

The purpose of the study was to determine: (1) if Head Starters, as a group, differed significantly in language development from Non-Head Starters, (2) if there were differences at each grade level (kindergarten, first, and second grades), and (3) if the differences, by grade levels, varied with time following exposure to the Head Start experiences.

The hypotheses tested in this study were:

1. There is no significant difference in the language development of students with Head Start experience and students from the same socio-economic background without the experience in terms of vocabulary and mean length of response.
2. There is no significant difference in the language development of students with Head Start experience and students from a middle-class environment in terms of vocabulary and mean length of response.

The method of research was ex post facto. The samples consisted of 162 Negro children, 108 being disadvantaged and 54 being middle-class. Children were enrolled in two elementary schools in Atlanta, Georgia, in kindergarten, first, and second grades. Frequency matching on the variables of sex, age and socio-economic status was utilized.

The mean chronological age at the time of testing for each of the three groups--Head Start, Non-Head Start and middle class--was 6.2. Parents' occupations and residential areas were used as selection criteria, with the disadvantaged pupils being compared on these factors and the middle-class students being contrasted. An equal number of boys and girls was used in each group.

Data were collected by administering the Peabody Picture Vocabulary Test and eliciting 50 consecutive responses from the children. The raw scores of the Peabody Picture Vocabulary Test were used as vocabulary of recognition scores. The mean number of words in the 50 responses was the child's mean length of response. Also, from the 50 responses, the mean number of words appearing was taken as a measure of the vocabulary of use.

Summary of related literature.--The review of related literature

was summarized as follows:

Pre-school education for the disadvantaged has become the focus of attention since the implementation of Project Head Start in 1965. Although statistical research data are limited on the achievements of the program, there is some evidence that shows that the program is beneficial and it has a positive effect on the language development of pre-school disadvantaged children. Head Start children often score higher on tests but gains are not held without appropriate follow-up in kindergarten and first grade. The future of Head Start appears assured since Follow-Through was initiated to help children maintain gains they make.

Results.--Both hypotheses were accepted. It was found that:

1. Head Starters did not differ significantly from Non-Head Starters.
2. Language differences favoring Head Starters, although not significant, were found to exist at each grade level between Head Starters and Non-Head Starters.
3. The language differences between Head Start and Non-Head Start children varied with the time following exposure to the Head Start experiences, the difference being greater at kindergarten and becoming smaller in the second grade.

More specifically, the findings indicated that:

1. There was a significant difference between middle-class subjects and Head Start subjects in recognition vocabulary in kindergarten and first grade. This finding is consistent with the belief that children from middle-class families are exposed to richer and more wholesome home atmospheres and influences than those experienced by children of lower-class

homes. The effects of the children's experiential backgrounds became apparent rather early in their lives. Generally, it is believed that behavior is largely determined by environmental influences. Although the Head Start subjects probably benefited from the program, it was not long enough to close the gap between the groups.

2. There was a significant difference between middle-class subjects and Non-Head Start subjects in recognition vocabulary in kindergarten and first grade. The point made earlier regarding the advantages children from middle-class homes have over those from lower-class homes becomes even more significant when consideration is given to the fact that children from the former type homes had developed a much better vocabulary than had those children from the latter type of homes. The fact of the matter is that the Non-Head Start subjects had not had comparable opportunities for vocabulary development as those from the middle-class homes.
3. A significant difference, in favor of boys, was noted in recognition vocabulary scores when compared to girls in the second grade. This was an interesting finding. Generally, girls excell boys in vocabulary development, except where technical language is involved at later stages of growth. Could the Head Start Program have been biased toward the needs of boys? Another significant question is were the experiences of this program of such a nature that the girls reached their ceilings quicker than the boys whose recognition vocabulary was less highly developed? It appears that

the Head Start program aided the boys more in their recognition vocabulary than it did for girls. The implication inherent in this finding is that the development of a recognition vocabulary is independent of sex.

4. There was no significant difference between Head Start and Non-Head Start children in vocabulary of use and mean length of response. It is difficult to offer an adequate explanation of this finding. A rational explanation may be that the length of the Head Start program was not long enough to cause statistical differences in these measures. Another explanation might be that while children were encouraged to talk freely and to learn new words in the Head Start program, there was no significant difference between the experiences offered by the Head Start program and the general environment.
5. There was no significant difference between Head Start and middle-class subjects in vocabulary of use and mean length of response. Two important questions are raised here. First, is it likely that either of these groups of subjects failed to use the language it was capable of using? This could have been the case, especially with regards to the middle-class subjects, who approached the test situation with more anxiety and concern than did the Head Starters. On the other hand, it appears that the gap between Head Starters and middle-class subjects was closed because of the Head Start experiences. The other question is whether or not the motivating conditions giving rise to the subjects' behavior were adequate to elicit the best responses from both groups. It is very

doubtful that this kind of condition prevailed.

Conclusions.--These findings seem to warrant the following conclusions:

1. The evidence of language growth, although not statistically significant, means that a summer of Head Start does make a substantive beginning in language development for disadvantaged children. Without follow-through experience, the gains made by Head Start children diminished by the second grade.
2. The variables of the length of the program and methods, may be important considerations for language growth and development in Project Head Start.

Implications.--The following implications emerged from the interpretations of findings and conclusions:

1. The permissive environment of Head Start encourages speech, while the classroom encourages passivity and limits oral communication.
2. Boys, when given the attention and affection in Head Start that is generally given to girls, will develop better linguistic skills.
3. Boys, while needing pre-school experiences more than girls, also benefit more from the experiences.
4. The effects of Head Start can be observed several years later in some areas of language development, even with limited follow-through.
5. Children, apparently, do not lose language gains as

quickly as they do the gains made in other areas.

Recommendations.--The writer recommends the following:

1. There is a need for further research giving consideration to such variables as length of program and continuity of the Head Start experiences.
2. If Head Start is to continue with its emphasis on language development, remedial as well as developmental techniques should be utilized. This may increase differences among the groups to a statistically significant difference.
3. The question of age at which children enroll in the program, as it relates to language development and language readiness, should be re-evaluated in terms of program objectives over an extended period of time. Possibly, the Head Start program needs to begin sooner than four years of age.
4. Schools should attempt to provide more rich and wholesome opportunities for, and experiences in, oral communication for all children.

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